is true for every possible different face model. By adding this constraint, the base mesh has a property in that it fits different face models in the same way. In addition, the inventive algorithm utilizes a smoothing functional that is minimized to ensure that there is a good correspondence between the base mesh and the face model.

In another embodiment, a reflectance processing technique is provided that gives a measure of the reflectance of the surface of a subject's face. To measure reflectance, the inventive technique separates the reflectance into its diffuse and specular components and focuses on the treatment of the diffuse components.

To measure the diffuse component, an albedo map is first defined. The albedo map is defined by first providing a camera and a subject that is illuminated by multiple different light sources. The light sources are filtered by polarizing filters that, in combination with a polarizing filter placed in front of the camera, suppress specular reflection or prevent specular reflection from being recorded. A sequence of images is taken around the subject's head. Each individual image is processed to provide an individual albedo map that corresponds to that image. All of the albedo maps for a particular subject are then combined to provide a single albedo map for the subject's entire face.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a high level diagram of a general purpose computer that is suitable for use in implementing the described embodiments.

Fig. 2 is a schematic diagram of a system that can be utilized to capture both structural information and reflectance information of a subject's face at the same time.

The patent or application file contains at least one drawing executed in color. Copies of this patent or patent application publication with color drawing(s) will be provided by the office upon request and payment of the necessary fee.